Homework 13 – Do not hand in

Problems


2. Exercise 6.21.
   
   *Hint:* Recall that we proved that ALG makes at most one top-level call to Fix(C) at most once for each clause C.

3. (Algorithmic LLL) Show that given an integer n, it is possible to find, in time $n^{O(k)}$, a 3-coloring of the edges of the complete graph $K_n$ such that no $k$-clique vertices is monochromatic (that is, has all its edges colored the same way) as long as $8 \left( \frac{k}{2} \right) \binom{n-2}{k} 3^{1-\frac{k}{2}} \leq 1$.

   *Hint:* Use (with some modifications) the algorithmic version of the Lovasz Local Lemma.